

Exclosure to Subject Specific Regulations
 from 18.07.2018
 for Master-Programme Flugzeug-
 Systemtechnik
 at TUHH
 Programme Director: Prof. Frank Thielecke
 Total: 120 CP
 Number of Specilisations to choose: 0

TUHH

Course Scheme Master Aircraft Systems Engineering (FSTMS)

Consolidated Version
 for Study Cohort: WiSe21/22
 en_head_sda
 and Approval of Chair from:
 04.05.2022
 Replaces Version from: 17.03.2021
 In Force on: 01.10.2018
 Out of Force on: 30.09.2024

Das offene Wahlpflichtmodul "Ausgewählte Themen der Luftfahrt-Systemtechnik" kann entweder im Umfang von 6 (Alternative A) oder 12 Leistungspunkten (Alternative B) belegt werden. Es darf jedoch nicht mehrfach belegt werden.

Information regarding the lectures are available in the TUHH modul manuals as well as in the course catalogue.

| Re-com. Term | Module | | | | | | Examination | | | Course Work | | |
|---|--|----------|----------------------|-----------|----------|-----------|-------------|----------------------------------|---------------------|-------------|------------------|--------------|
| | Module Name (German / English) | Language | ModuleResponsability | Institute | C/EC (1) | CM/OM (2) | CP (4) | Grade | Examination Form(3) | Compulsory | Course Work Type | Bonus (in %) |
| Core Qualification Compulsory Courses: 60 LP Optional Courses: 30 LP | | | | | | | | | | | | |
| 1 | Flugzeug-Energiesysteme / Aircraft Energy Systems | DE | Prof. Thielecke | M-7 | C | CM | 6 | Y | KL | | | |
| 1 | Flugzeug-Kabinensysteme / Aircraft Cabin Systems | DE | Prof. God | M-25 | C | CM | 6 | Y | KL | | | |
| 1 | Luftfahrzeugentwurf I (Entwurf von Verkehrsflugzeugen) / Aircraft Design I (Civil Aircraft Design) | DE | Prof. Gollnick | M-28 | C | CM | 6 | Y | KL | N | TE | 10 |
| 1 | Ausgewählte Themen der Regelungstechnik / Advanced Topics in Control | EN | Prof. Werner | E-14 | EC | CM | 6 | Y | MP | | | |
| 1 | Theorie und Entwurf regelungstechnischer Systeme / Control Systems Theory and Design | EN | Prof. Werner | E-14 | EC | CM | 6 | Y | KL | | | |
| 1-2 | Flugphysik / Flight Physics | DE | Prof. Thielecke | M-7 | C | CM | 6 | Y | KL | | | |
| 1-2 | Ausgewählte Themen der Luftfahrt-Systemtechnik (Alternative A: 6 LP) / Selected Topics of Aeronautical Systems Engineering (Alternative A: 6 LP) | DE / EN | Prof. Thielecke | M-7 | EC | OM | 6 | Selection out of Catalogue below | | | | |
| 1-2 | Ausgewählte Themen der Luftfahrt-Systemtechnik (Alternative B: 12 LP) / Selected Topics of Aeronautical Systems Engineering (Alternative B: 12 LP) | DE / EN | Prof. Thielecke | M-7 | EC | OM | 12 | Selection out of Catalogue below | | | | |
| 1-2 | Entwurf von Kabinensystemen / Cabin Systems Engineering | DE | Prof. God | M-25 | EC | CM | 6 | Y | KL | | | |
| 2 | Flugsteuerungssysteme / Flight Control Systems | DE | Prof. Thielecke | M-7 | C | CM | 6 | Y | KL | | | |
| 2 | Systems Engineering / Systems Engineering | DE | Prof. God | M-25 | C | CM | 6 | Y | KL | | | |

| | | Module | | | | | Examination | | | Course Work | | |
|--------------|---|----------|----------------------|-----------|----------|-----------|-------------|-------|---------------------|-------------|------------------|--------------|
| Re-com. Term | Module Name (German / English) | Language | ModuleResponsability | Institute | C/EC (1) | CM/OM (2) | CP (4) | Grade | Examination Form(3) | Compulsory | Course Work Type | Bonus (in %) |
| 2 | Aufbau und Eigenschaften der Faser-Kunststoff-Verbunde / Structure and properties of fibre-polymer-composites | DE / EN | Prof. Fiedler | M-11 | EC | CM | 6 | Y | KL | | | |
| 2 | Compiler für Eingebettete Systeme / Compilers for Embedded Systems | DE / EN | Prof. Falk | E-13 | EC | CM | 6 | Y | MP | | | |
| 2 | Einführung in Wellenleiter, Antennen und Elektromagnetische Verträglichkeit / Introduction to Waveguides, Antennas, and Electromagnetic Compatibility | DE / EN | Prof. Schuster | E-18 | EC | CM | 6 | Y | MP | | | |
| 2 | Eingebettete Systeme / Embedded Systems | EN | Prof. Falk | E-13 | EC | CM | 6 | Y | KL | Y | FFST | 10 |
| 2 | Entwurfsoptimierung und probabilistische Verfahren in der Strukturmechanik / Design optimization and probabilistic approaches in structural analysis | DE | Prof. Kriegesmann | M-EXK1 | EC | CM | 6 | Y | SA | | | |
| 2 | Flugregelung: Entwurf und Anwendung / Flight Control Law Design and Application | EN | Prof. Thielecke | M-7 | EC | CM | 6 | Y | KL | | | |
| 2 | Luftfahrzeugentwurf II (Entwurf von Flugsystemen) / Aircraft Design II (Special Air Vehicle Design) | DE / EN | Prof. Gollnick | M-28 | EC | CM | 6 | Y | KL | | | |
| 2 | Nichtlineare Dynamik / Nonlinear Dynamics | DE / EN | Prof. Hoffmann | M-14 | EC | CM | 6 | Y | KL | | | |
| 2 | Numerik gewöhnlicher Differentialgleichungen / Numerical Treatment of Ordinary Differential Equations | DE / EN | Prof. Ruprecht | E-10 | EC | CM | 6 | Y | KL | | | |
| 2 | Optimale und robuste Regelung / Optimal and Robust Control | EN | Prof. Werner | E-14 | EC | CM | 6 | Y | MP | | | |
| 2 | Simulation von Kommunikationsnetzen / Simulation of Communication Networks | EN | Prof. Timm-Giel | E-4 | EC | CM | 6 | Y | MP | | | |
| 2 | Technische Akustik I (Akustische Wellen, Lärmschutz, Psychoakustik) / Technical Acoustics I (Acoustic Waves, Noise Protection, Psycho Acoustics) | EN | Prof. von Estorff | M-16 | EC | CM | 6 | Y | KL | | | |
| 3 | Systemtechnisches Entwicklungsprojekt (Projektarbeit) / System Development Projekt | DE | Prof. Thielecke | M-7 | C | CM | 12 | Y | SA | | | |
| 3 | Advanced Fuels / Advanced Fuels | DE / EN | Prof. Kaltschmitt | V-9 | EC | CM | 6 | Y | KL | Y | SA | 20 |
| 3 | Avionik sicherheitskritischer Systeme / Avionics for safety-critical Systems | DE | Dr. Halle | M-7 | EC | CM | 6 | Y | MP | Y | FFST | 0 |
| 3 | Finite-Elemente-Methoden / Finite Elements Methods | EN | Prof. von Estorff | M-16 | EC | CM | 6 | Y | KL | N | MT | 20 |
| 3 | Kommunikationsnetze / Communication Networks | EN | Prof. Timm-Giel | E-4 | EC | CM | 6 | Y | RE | | | |
| 3 | Methoden der integrierten Produktentwicklung / Methods of Integrated Product Development | DE | Prof. Krause | M-17 | EC | CM | 6 | Y | MP | | | |
| 3 | Modellierung und Optimierung in der Dynamik / Modelling and Optimization in Dynamics | DE | Prof. Seifried | M-13 | EC | CM | 6 | Y | MP | | | |

| | | Module | | | | | Examination | | | Course Work | | |
|--|--|----------|----------------------|-----------|----------|-----------|-------------|--|---------------------|-------------|------------------|--------------|
| Re-com. Term | Module Name (German / English) | Language | ModuleResponsability | Institute | C/EC (1) | CM/OM (2) | CP (4) | Grade | Examination Form(3) | Compulsory | Course Work Type | Bonus (in %) |
| 3 | Prozessautomatisierungstechnik / Industrial Process Automation | EN | Prof. Schlaefer | E-1 | EC | CM | 6 | Y | KL | N | ÜA | 10 |
| 3 | Rechnerarchitektur / Computer Architecture | DE / EN | Prof. Falk | E-13 | EC | CM | 6 | Y | KL | N | FFST | 15 |
| 3 | Robotik / Robotics | EN | Dr. Gomse | M-23 | EC | CM | 6 | Y | KL | Y | FFST | 0 |
| 3 | Technische Akustik II (Raumakustik, Berechnungsverfahren) / Technical Acoustics II (Room Acoustics, Computational Methods) | EN | Prof. Kriegesmann | M-16 | EC | CM | 6 | Y | MP | | | |
| 1-3 | Nichttechnische Angebote im Master / Non-technical Courses for Master | DE / EN | Richter | 0-TUHH | C | OM | 6 | Selection out of seperatly published Catalogue | | | | |
| 1-3 | Betrieb & Management / Business & Management | DE / EN | Prof. Meyer | W-1 | C | OM | 6 | Selection out of seperatly published Catalogue | | | | |
| Thesis Compulsory Courses: 30 LP Optional Courses: 0 LP | | | | | | | | | | | | |
| 4 | Masterarbeit / Master Thesis | | Professoren der TUHH | 0-TUHH | C | CM | 30 | Y | AB | | | |

Selected Topics of Aeronautical Systems Engineering (Alternative A: 6 LP)

| Course | | | | | Examination | | | | Additional information |
|--|-------------------|--------------|---------|---------|-------------|-------|---------------------|---|------------------------|
| Course Name (German / English) | Course Form LV(5) | Language (6) | SWS (7) | Sem. LV | CP (4) | Grade | Examination Form(3) | | |
| Aufbaukurs SE-ZERT / Advanced Training Course SE-ZERT | PBL | DE | 2 | SoSe | 3 | Y | KL | | |
| Betrieb einer Luftverkehrsgesellschaft / Airline Operations | VL | DE | 3 | SoSe | 3 | Y | KL | | |
| Ermüdung und Schadenstoleranz / Fatigue & Damage Tolerance | VL | EN | 2 | WiSe | 3 | Y | MP | | |
| Flugführung I / Flight Guidance I | VL | DE | 2 | WiSe | 2 | Y | KL | | |
| Flugführung I (Grundlagen) / Flight Guidance I (Introduction) | VL | DE | 2 | WiSe | 2 | Y | KL | Replaces "Flight Guidance I (VL)" from WiSe21/22 | |
| Flugführung I / Flight Guidance I | HÜ | DE | 1 | WiSe | 1 | Y | KL | | |
| Flugführung I (Grundlagen) / Flight Guidance I (Introduction) | HÜ | DE | 1 | WiSe | 1 | Y | KL | Replaces "Flight Guidance I (HÜ)" from WiSe21/22 | |
| Flugführung II / Flight Guidance II | VL | DE | 2 | SoSe | 2 | Y | KL | | |
| Flugführung II (Flugregelung) / Flight Guidance II (Flight Control) | VL | DE | 2 | SoSe | 2 | Y | KL | Replaces "Flight Guidance II (VL)" from SoSe22 | |
| Flugführung II (Missionsmanagement/Flugregelung) / Flight Guidance II (Flight Control) | VL | DE | 2 | SoSe | 2 | Y | KL | Replaces "Flight Guidance II (Flight Control) (VL)" from SoSe22 | |
| Flugführung II / Flight Guidance II | GÜ | DE | 1 | SoSe | 1 | Y | KL | | |
| Flugführung II (Flugregelung) / Flight Guidance II (Flight Control) | GÜ | DE | 1 | SoSe | 1 | Y | KL | Replaces "Flight Guidance II (GÜ)" from SoSe22 | |

| Course | | | | | Examination | | | |
|--|----------------------|-----------------|---------|------------|-------------|-------|------------------------|--|
| Course Name (German / English) | Course Form LV(5) | Language (6) | SWS (7) | Sem. LV | CP (4) | Grade | Examination Form(3) | Additional information |
| Flugführung II (Missionsmanagement/Flugregelung) / Flight Guidance II (Flight Control) | GÜ | DE | 1 | SoSe | 1 | Y | KL | Replaces "Flight Guidance II (Flight Control) (GÜ)" from SoSe22 |
| Flughafenbetrieb / Airport Operations | VL | DE | 3 | WiSe | 3 | Y | KL | |
| Flughafenplanung / Airport Planning | VL | DE | 2 | WiSe | 2 | Y | KL | |
| Flughafenplanung / Airport Planning | GÜ | DE | 1 | WiSe | 1 | Y | KL | |
| Generationsübergreifende Blechkonstruktion / GSD - Generational Sheet-Metal Development | VL | DE | 3 | WiSe | 3 | Y | MP | |
| Leichtbaupraktikum / Lightweight Design Practical Course | PBL | DE/EN | 3 | SoSe | 3 | Y | MP | |
| Luftsicherheit / Aviation Security | VL | DE | 2 | WiSe | 2 | Y | KL | |
| Luftsicherheit / Aviation Security | GÜ | DE | 1 | WiSe | 1 | Y | KL | |
| Luftverkehr und Umwelt / Aviation and Environment | VL | DE | 3 | SoSe | 3 | Y | KL | |
| Maschinelles Lernen in sicherheitskritischen cyberphysischen Systemen / Machine Learning in Safety-Critical Cyber-Physical Systems | VL | DE | 2 | WiSe | 2 | Y | SA | |
| Maschinelles Lernen in sicherheitskritischen cyberphysischen Systemen / Machine Learning in Safety-Critical Cyber-Physical Systems | GÜ | DE | 1 | WiSe | 1 | Y | SA | |
| Mechanismen und Systeme der Werkstoffprüfung - aus Sicht der Produktentwicklung und Schadensanalyse / Mechanisms and Systems of Materials Testing - from the viewpoint of product development and Failure Analysis | VL | DE | 2 | SoSe | 2 | Y | KL | |
| Mechanismen, Systeme und Verfahren der Werkstoffprüfung / Mechanisms, Systems and Processes of Materials Testing | VL | DE | 2 | SoSe | 2 | Y | KL | Replaces "Mechanisms and Systems of Materials Testing - from the viewpoint of product development and Failure Analysis (VL)" from SoSe22 |
| Multidisziplinäre Design Optimierung im Luftfahrzeugentwurf / Multi Disciplinary Optimization in Aircraft Design | VL | DE/EN | 3 | WiSe | 3 | Y | KL | |
| Nachhaltige industrielle Produktion / Sustainable Industrial Production | VL | DE | 2 | SoSe | 4 | Y | KL | |
| Strahltriebwerke / Turbo Jet Engines | VL | DE | 2 | WiSe | 3 | Y | MP | |
| Strukturmechanik von Faserverbunden / Structural Mechanics of Fibre Reinforced Composites | VL | EN | 2 | WiSe | 3 | Y | MP | |
| Strukturmechanik von Faserverbunden / Structural Mechanics of Fibre Reinforced Composites | HÜ | EN | 1 | WiSe | 1 | Y | MP | |
| Systemsimulation / System Simulation | VL | DE | 2 | WiSe | 2 | Y | MP | |
| Systemsimulation / System Simulation | HÜ | DE | 1 | WiSe | 2 | Y | MP | |
| Werkstoffprüfung / Materials Testing | VL | DE | 2 | WiSe | 2 | Y | KL | |
| Werkstoffprüfung - aus Sicht der industriellen Anwendung / Materials Testing - from the viewpoint of industrial application | VL | DE | 2 | WiSe | 2 | Y | KL | Replaces "Materials Testing (VL)" from WiSe21/22 |

| Course | | | | | Examination | | | |
|---|----------------------|-----------------|---------|------------|-------------|-------|------------------------|------------------------|
| Course Name (German / English) | Course Form LV(5) | Language (6) | SWS (7) | Sem. LV | CP (4) | Grade | Examination Form(3) | Additional information |
| Zuverlässigkeit in der Maschinendynamik / Reliability in Engineering Dynamics | VL | EN | 2 | SoSe | 2 | Y | KL | |
| Zuverlässigkeit in der Maschinendynamik / Reliability in Engineering Dynamics | VL | EN | 2 | SoSe | 2 | Y | KL | |
| Zuverlässigkeit in der Maschinendynamik / Reliability in Engineering Dynamics | GÜ | EN | 1 | SoSe | 2 | Y | KL | |
| Zuverlässigkeit in der Maschinendynamik / Reliability in Engineering Dynamics | GÜ | EN | 1 | SoSe | 2 | Y | KL | |
| Zuverlässigkeit von Flugzeugsystemen / Reliability of Aircraft Systems | VL | DE | 2 | WiSe | 3 | Y | KL | |

Selected Topics of Aeronautical Systems Engineering (Alternative B: 12 LP)

| Course | | | | | Examination | | | |
|--|----------------------|-----------------|---------|------------|-------------|-------|------------------------|---|
| Course Name (German / English) | Course Form LV(5) | Language (6) | SWS (7) | Sem. LV | CP (4) | Grade | Examination Form(3) | Additional information |
| Aufbaukurs SE-ZERT / Advanced Training Course SE-ZERT | PBL | DE | 2 | SoSe | 3 | Y | KL | |
| Betrieb einer Luftverkehrsgesellschaft / Airline Operations | VL | DE | 3 | SoSe | 3 | Y | KL | |
| Ermüdung und Schadenstoleranz / Fatigue & Damage Tolerance | VL | EN | 2 | WiSe | 3 | Y | MP | |
| Flugführung I / Flight Guidance I | VL | DE | 2 | WiSe | 2 | Y | KL | |
| Flugführung I (Grundlagen) / Flight Guidance I (Introduction) | VL | DE | 2 | WiSe | 2 | Y | KL | Replaces "Flight Guidance I (VL)" from WiSe21/22 |
| Flugführung I / Flight Guidance I | HÜ | DE | 1 | WiSe | 1 | Y | KL | |
| Flugführung I (Grundlagen) / Flight Guidance I (Introduction) | HÜ | DE | 1 | WiSe | 1 | Y | KL | Replaces "Flight Guidance I (HÜ)" from WiSe21/22 |
| Flugführung II / Flight Guidance II | VL | DE | 2 | SoSe | 2 | Y | KL | |
| Flugführung II (Flugregelung) / Flight Guidance II (Flight Control) | VL | DE | 2 | SoSe | 2 | Y | KL | Replaces "Flight Guidance II (VL)" from SoSe22 |
| Flugführung II (Missionsmanagement/Flugregelung) / Flight Guidance II (Flight Control) | VL | DE | 2 | SoSe | 2 | Y | KL | Replaces "Flight Guidance II (Flight Control) (VL)" from SoSe22 |
| Flugführung II / Flight Guidance II | GÜ | DE | 1 | SoSe | 1 | Y | KL | |
| Flugführung II (Flugregelung) / Flight Guidance II (Flight Control) | GÜ | DE | 1 | SoSe | 1 | Y | KL | Replaces "Flight Guidance II (GÜ)" from SoSe22 |
| Flugführung II (Missionsmanagement/Flugregelung) / Flight Guidance II (Flight Control) | GÜ | DE | 1 | SoSe | 1 | Y | KL | Replaces "Flight Guidance II (Flight Control) (GÜ)" from SoSe22 |
| Flughafenbetrieb / Airport Operations | VL | DE | 3 | WiSe | 3 | Y | KL | |
| Flughafenplanung / Airport Planning | VL | DE | 2 | WiSe | 2 | Y | KL | |
| Flughafenplanung / Airport Planning | GÜ | DE | 1 | WiSe | 1 | Y | KL | |

| Course | | | | | Examination | | | |
|--|----------------------|-----------------|---------|------------|-------------|-------|------------------------|--|
| Course Name (German / English) | Course Form LV(5) | Language (6) | SWS (7) | Sem. LV | CP (4) | Grade | Examination Form(3) | Additional information |
| Generationsübergreifende Blechkonstruktion / GSD - Generational Sheet-Metal Development | VL | DE | 3 | WiSe | 3 | Y | MP | |
| Leichtbaupraktikum / Lightweight Design Practical Course | PBL | DE/EN | 3 | SoSe | 3 | Y | MP | |
| Luftsicherheit / Aviation Security | VL | DE | 2 | WiSe | 2 | Y | KL | |
| Luftsicherheit / Aviation Security | GÜ | DE | 1 | WiSe | 1 | Y | KL | |
| Luftverkehr und Umwelt / Aviation and Environment | VL | DE | 3 | SoSe | 3 | Y | KL | |
| Maschinelles Lernen in sicherheitskritischen cyberphysischen Systemen / Machine Learning in Safety-Critical Cyber-Physical Systems | VL | DE | 2 | WiSe | 2 | Y | SA | |
| Maschinelles Lernen in sicherheitskritischen cyberphysischen Systemen / Machine Learning in Safety-Critical Cyber-Physical Systems | GÜ | DE | 1 | WiSe | 1 | Y | SA | |
| Mechanismen und Systeme der Werkstoffprüfung - aus Sicht der Produktentwicklung und Schadensanalyse / Mechanisms and Systems of Materials Testing - from the viewpoint of product development and Failure Analysis | VL | DE | 2 | SoSe | 2 | Y | KL | |
| Mechanismen, Systeme und Verfahren der Werkstoffprüfung / Mechanisms, Systems and Processes of Materials Testing | VL | DE | 2 | SoSe | 2 | Y | KL | Replaces "Mechanisms and Systems of Materials Testing - from the viewpoint of product development and Failure Analysis (VL)" from SoSe22 |
| Nachhaltige industrielle Produktion / Sustainable Industrial Production | VL | DE | 2 | SoSe | 4 | Y | KL | |
| Strahltriebwerke / Turbo Jet Engines | VL | DE | 2 | WiSe | 3 | Y | MP | |
| Strukturmechanik von Faserverbunden / Structural Mechanics of Fibre Reinforced Composites | VL | EN | 2 | WiSe | 3 | Y | MP | |
| Strukturmechanik von Faserverbunden / Structural Mechanics of Fibre Reinforced Composites | HÜ | EN | 1 | WiSe | 1 | Y | MP | |
| Systemsimulation / System Simulation | VL | DE | 2 | WiSe | 2 | Y | MP | |
| Systemsimulation / System Simulation | HÜ | DE | 1 | WiSe | 2 | Y | MP | |
| Werkstoffprüfung / Materials Testing | VL | DE | 2 | WiSe | 2 | Y | KL | |
| Werkstoffprüfung - aus Sicht der industriellen Anwendung / Materials Testing - from the viewpoint of industrial application | VL | DE | 2 | WiSe | 2 | Y | KL | Replaces "Materials Testing (VL)" from WiSe21/22 |
| Zuverlässigkeit in der Maschinendynamik / Reliability in Engineering Dynamics | VL | EN | 2 | SoSe | 2 | Y | KL | |
| Zuverlässigkeit in der Maschinendynamik / Reliability in Engineering Dynamics | VL | EN | 2 | SoSe | 2 | Y | KL | |
| Zuverlässigkeit in der Maschinendynamik / Reliability in Engineering Dynamics | GÜ | EN | 1 | SoSe | 2 | Y | KL | |
| Zuverlässigkeit in der Maschinendynamik / Reliability in Engineering Dynamics | GÜ | EN | 1 | SoSe | 2 | Y | KL | |

| Course | | | | | Examination | | | |
|--------------------------------|----------------------|-----------------|---------|------------|-------------|-------|------------------------|------------------------|
| Course Name (German / English) | Course Form LV(5) | Language (6) | SWS (7) | Sem. LV | CP (4) | Grade | Examination Form(3) | Additional information |

| | | | | | | | | |
|--|----|----|---|------|---|---|----|--|
| Zuverlässigkeit von Flugzeugsystemen / Reliability of Aircraft Systems | VL | DE | 2 | WiSe | 3 | Y | KL | |
|--|----|----|---|------|---|---|----|--|

Explanation:

¹C=Compulsory, EC=Elective Compulsory

²CM=Compulsory Defined Module, OM=Optional Defined Module

³MT=Midterm, KL=Written exam, SA=Written elaboration, FFA=Subject theoretical and practical work, FFST=Subject theoretical and practical work, MP=Oral exam, RE=Presentation, ÜA=Exercices, AB=Thesis, SA It. FPrO=Written elaboration (accord. to Internship Regulations), TE=Attestation

⁴CP=Credit Points

⁵VL=Lecture, SE=Seminar, GÜ=Recitation Section (small), PBL=Project-/problem-based Learning, PR=Practical Course, HÜ=Recitation Section (large), IV=Integrated Lecture

⁶DE=German, EN=English, DE/EN=German and English

⁷SWS=Contact hours